

REMARKS/ARGUMENTS

Claims 1-4 have been amended in a grammatical, non-limiting manner.

New claims 5-8 require alcohol/phenol conversion of 4-97% or 5-95%. Support for these new claims exists throughout the present specification, including page 12, line 5.

New claims 9 and 10 require the reflux ratio to be controlled within the range of 5-50. Support for these new claims exists throughout the present specification, including page 18, line 19.

Claims 1-10 are currently pending.

The Office Action rejected claims 1-4 under 35 U.S.C. § 103 as obvious over U.S. patent 5,037,978 (“Mirabelli”). In view of the following comments, Applicants respectfully request reconsideration and withdrawal of this rejection.

The invention methods require controlling the reflux ratio so that the temperatures in the upper, middle and lower stages of the distillation column remain within the required temperature ranges (in terms of atmospheric pressure). As demonstrated by the examples in the present specification, merely controlling the temperature of the uppermost portion of the distillation column does not result in maintaining the temperatures within the required ranges throughout the distillation column. (See, comparative examples 1 and 2 at pages 19-21). Rather, controlling the reflux ratio is necessary to maintain the temperatures within the required ranges throughout the column. (See, invention examples).

Mirabelli neither teaches nor suggests the invention methods. Mirabelli does not teach or suggest controlling reflux ratio, nor does it teach or suggest maintaining temperature

throughout the distillation column as required by the present claims. Rather, Mirabelli merely monitors the temperature at the uppermost portion of the distillation column. As demonstrated in the comparative examples at pages 19-21 of the present specification, such monitoring without appropriately controlling the reflux ratio does not lead to the required temperature ranges throughout the distillation column and, thus, does not lead to the claimed invention. One skilled in the art, following Mirabelli, would not be able to and/or have no motivation to control reflux ratio and, thus, temperatures throughout the distillation column.

For at least this reason, Mirabelli cannot teach or suggest the invention methods. Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection.

The Office Action also rejected claims 3 and 4 under 35 U.S.C. § 112, second paragraph, asserting that insufficient antecedent basis existed for terms in these claims. In view of the following comments, Applicants respectfully request reconsideration and withdrawal of this rejection.

The pending claims require certain temperatures throughout the distillation column while the conversion of alcohol or phenol is within the specified ranges. Thus, for claims 1 and 2, the temperatures are to be controlled after conversion has reached 10% and until the conversion has reached 90%. For claims 5 and 6, the period of controlled temperatures is longer, beginning after conversion has reached 5% and ending after conversion has reached 95%. Claims 7 and 8 require the longest time period of controlled temperatures, starting when conversion has reached 4% and ending after conversion has reached 97%. Thus, claims

1 and 2 are broader than claims 5 and 6 which, in turn, are broader than claims 7 and 8 because the required time periods for controlling temperature are shorter.

Claims 3 and 4 require certain procedures after 97% conversion has occurred. In other words, claims 3 and 4 set forth the time at which the procedures set forth therein occur.

Because the percent conversion figures in the claims relate to certain time periods and/or the timing of specified procedures, the actual numbers used in the claims do not have to correspond for the antecedent basis requirements of § 112 to be satisfied. For example, the methods in claims 1 and 2 require controlled temperatures until 90% conversion. However, according to claims 3 and 4, it is not until after conversion reaches 97% that the procedures set forth therein are performed. Both the timing of procedures and the language used in the claims to describe such timing are clear and entirely consistent with each other, thereby satisfying § 112.

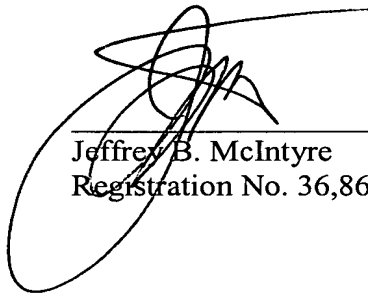
In view of the above, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 112.

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Applicants believe that the present application is in condition for allowance. Prompt and favorable consideration is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Jeffrey B. McIntyre
Registration No. 36,867

Customer Number

22850

Tel #: (703) 413-3000
Fax #: (703) 413-2220